Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) An autonomous robot for traversing a conduit comprising:

a first section having a plurality of pitched wheels, said pitched wheels being oriented such that each of their axes defines a pitch angle greater than zero degrees and less than ninety degrees with respect to the longitudinal axis of the conduit each of said pitched wheels being positioned at a different point along the length of the robot such that no two pitched wheels are at the same point along the length of the robot;

a second section rotatably connected to said first section, said second section having a plurality of wheels aligned parallel to the longitudinal axis of the conduit; and

means for causing rotation of one of said first and second sections relative to the other of said first and second sections;

wherein said relative rotation of said first and second sections provides locomotive motion of the robot.

2. Canceled.

3. (Previously presented) The robot according to claim 1 wherein each of said pitched wheels is positioned at a different azimuthal position about the axis of the robot.

4. (Original) The robot according to claim 1 wherein at least two of said pitched wheels are positioned at the same azimuthal position about the axis of the robot.

5. (Original) The robot according to claim 1 wherein said pitched wheels define at least one helical row.

6. (Original) The robot according to claim 5 wherein adjacent pitched wheels are spaced 180 degrees apart about the axis of the robot.

7. (Previously presented) An autonomous robot for traversing a conduit comprising:

a first section having a plurality of pitched wheels, said pitched wheels being oriented such that each of their axes defines a pitch angle greater than zero degrees and less than ninety degrees with respect to the longitudinal axis of the conduit;

a second section rotatably connected to said first section, said second section having a plurality of wheels aligned parallel to the longitudinal axis of the conduit; and

means for causing rotation of one of said first and second sections relative to the other of said first and second sections;

wherein said relative rotation of said first and second sections provides locomotive motion of the robot; and

wherein at least one wheel is moveable between a first position in which all of said wheels on the same section contact said conduit and a second position in which at least one of said of said wheels is retracted.

8. (Original) The robot according to claim 7 wherein the retraction distance of said at least one wheel is equal to at least one-third the diameter of the wheel.

9. (Original) The robot according to claim 8 wherein the retraction distance of said at least one wheel is equal to at least one-half the diameter of the wheel.

10. (Original) The robot according to claim 8 wherein the retraction distance of said at least one wheel is such that the diameter of the robot is decreased by at least 20 percent upon wheel retraction.

11. (Original) The robot according to claim 1 wherein said wheels have notched traction surfaces.

12. (Original) The robot according to claim 1 wherein at least one component of the robot has an outer diameter that substantially corresponds to the inside surface of the conduit and the

robot includes at least one internal passageway that allows fluid to flow along the length of the robot without having to pass between said at least one component and the inside surface of the conduit.

13. (Original) The robot according to claim 1, further comprising at least two optical encoders.

14. (Original) The robot according to claim 1 wherein the robot is no more than six inches in diameter.

15. (Currently amended) An autonomous robot for traversing a conduit comprising:

a body; and

a drive system capable of extracting energy from a flow of fluid through the conduit and using the energy to advance the body along the inside of the conduit, said drive system including at least one set of pitched wheels mounted on said body, each of said pitched wheels being positioned at a different point along the length of the robot such that no two pitched wheels in said set are at the same point along the length of the robot;

wherein at least one component of the robot has an outer diameter that substantially corresponds to the inside surface of the conduit and the robot includes at least one internal passageway that allows fluid to flow along the length of the robot without having to pass between said at least one component and the inside surface of the conduit.

16. (Original) The robot according to claim 15 wherein said drive system includes a plurality of pitched wheels that are each positioned at a different point along the length of the robot.

17. (Original) The robot according to claim 16 wherein said pitched wheels are each

positioned at a different point about the axis of the robot.

18. (Original) The robot according to claim 16 wherein said pitched wheels define at least one helical row.

19. (Original) The robot according to claim 18 wherein adjacent pitched wheels are spaced 180 degrees apart about the axis of the robot.

20. (Previously presented) An autonomous robot for traversing a conduit comprising:

a body; and

a drive system capable of extracting energy from a flow of fluid through the conduit and using the energy to advance the body along the inside of the conduit, said drive system including at least one set of pitched wheels mounted on said body;

wherein at least one component of the robot has an outer diameter that substantially corresponds to the inside surface of the conduit and the robot includes at least one internal passageway that allows fluid to flow along the length of the robot without having to pass between said at least one component and the inside surface of the conduit; and

wherein at least one wheel is moveable between a first position in which all of said wheels on the same section contact said conduit and a second position in which at least one of said of said wheels is retracted.

21. (Original) The robot according to claim 20 wherein the retraction distance of said at least one wheel is equal to at least one-third the diameter of the wheel.

22. (Original) The robot according to claim 21 wherein the retraction distance of said at least one wheel is equal to at least one-half the diameter of the wheel.

23. (Original) The robot according to claim 22 wherein the retraction distance of said at

least one wheel is such that the diameter of the robot is decreased by at least 20 percent upon wheel retraction.

24. (Original) The robot according to claim 15 wherein said wheels have notched traction surfaces.

25. (Original) The robot according to claim 15, further comprising at least two optical encoders.

26. (Original) The robot according to claim 19 wherein the robot is no more than six inches in diameter.